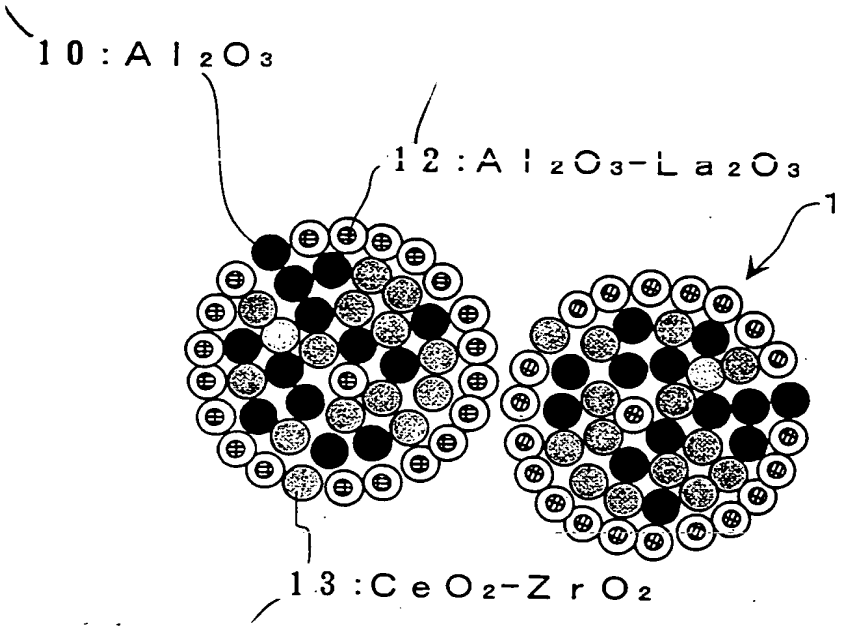
REMARKS

Applicants thank the Examiner and the Examiner's supervisor for the courtesy extended to Applicants' attorney during the interview held July 14, 2003, in the above-identified application. During the interview, Applicants' attorney explained the presently-claimed invention and why it is patentable over the applied prior art, and discussed other issues raised in the Office action. The discussion is summarized and expanded upon below.

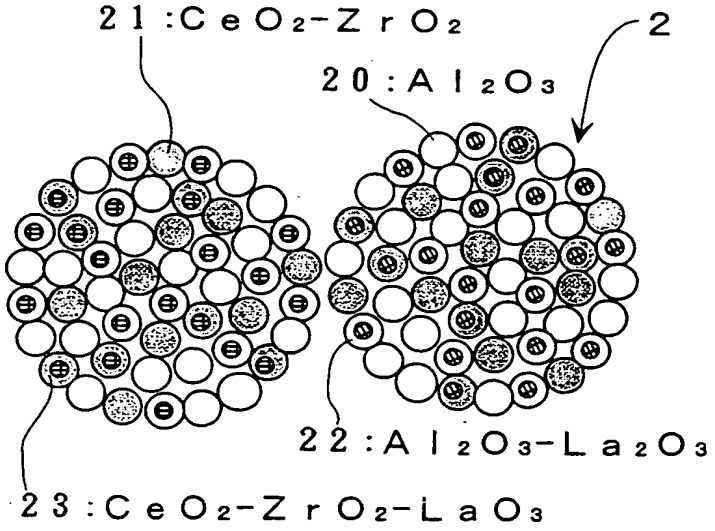
The present invention relates to a composite oxide, which is useful as a support for a catalyst for purifying an exhaust gas, a process for producing the same, a catalyst for purifying an exhaust gas, in which the composite oxide is employed as a support, and a process for producing the same.

As recited in, for example, above-amended Claim 1, the present invention is a composite oxide, comprising: agglomerated particles, each agglomerated particle comprising a plurality of fine particles, the agglomerated particles having an average particle diameter of 20 μm or less and the fine particles having an average diameter of 50 nm or less, wherein the plurality of fine particles comprises oxides of a plurality of metallic elements, and each fine particle independently comprises an oxide of one or more of said metallic elements, **said agglomerated particles having a surface and an inner portion, and wherein fine particles each having an oxide of the same metallic element or elements have a distribution in the surface portion that differs from the distribution in the inner portion.** (Emphasis added.)

The invention is exemplified by Fig. 1, which represents Example 1, described in the specification beginning at paragraph [0162], and which demonstrates the above-emphasized feature. The terms "surface" and "inner portion" are defined in the specification at paragraph [0047]. Fig. 1 is reproduced below:



As Fig. 1 shows, and as described in the specification at paragraph [0166], particles 12 are distributed more at the surface, while particles 10 and 13 are distributed more in the inner portion. The present invention can be contrasted with Fig. 2, which represents Comparative Example 1, described in the specification beginning at paragraph [0199], and reproduced below:



As Fig. 2 shows, and as described in the specification at paragraph [0202], the agglomerated particles had a substantially uniform metallic element distribution from the surface side to the inner portion. As described in the specification, and as shown by the wealth of comparative data therein, the structure of the claimed composite oxides herein results in better catalyst performance.

Other embodiments of the present invention are claimed in independent Claims 13, 15 and 33, as well as the dependent claims herein.

The claimed subject matter is neither disclosed nor suggested by the applied prior art.

During the above-referenced interview, the Examiner indicated that he did not believe the then claim language reflected a structure such as shown in Fig. 1. Applicants respectfully disagree. Nevertheless, the issue should now be moot, in view of the above-discussed amendment.

The rejection of Claim 1 under 35 U.S.C. §102(b) as anticipated by EP 794,527 (Mizutani et al), is respectfully traversed. The Examiner relies on the disclosure at page 3, line 42 through page 4, line 14 therein which is a disclosure of alumina fine particulate agglomerates or fine particulate agglomerates of a composite oxide consisting of alumina and other metal oxide(s), wherein the agglomerates have an average particle diameter of 0.005 to 0.5 μm, and the primary particles have an average particle diameter of not more than 40 nm. However, there is no disclosure in Mizutani et al with regard to the distribution of the metallic elements within the fine particulate agglomerates, even when the other metal oxide is present. Indeed, since Mizutani et al contemplate the use of alumina alone, Mizutani et al would appear to disclose particles having a relatively homogeneous distribution.

In the Office Action, at page 6, the Examiner finds that the above argument about metallic element distribution "is not persuasive as the particles of the reference appear to be the same as that of the instant claimed particles." In reply, Applicants respectfully submit

that the particles of Mizutani et al do **not** appear to be the same as that of the present particles. By what basis does the Examiner make this finding? There is clearly no reason to believe that the particles of Mizutani et al have the presently-claimed non-homogeneous distribution. Moreover, as discussed above, since Mizutani et al contemplate the use of alumina alone, their particles would appear to have a relatively homogeneous distribution. The fact that Mizutani et al also disclose a mixture of metallic oxides is irrelevant with regard to this argument.

The Examiner relies on *In re Best*, 195 USPQ 430 (CCPA 1977). *Best* holds that the burden of disproving a finding that a property or characteristic is inherent in a claimed invention, is shifted to the Applicant when the finding is reasonable, as to process claims. *Best* also stands for the proposition that where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an Applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product.

In reply, *Best* does not apply herein, because there is no reason to believe that the products claimed herein and those disclosed by Mizutani et al are identical or substantially identical, and they are not produced by identical or substantially identical processes.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1-38 under 35 U.S.C. §102(b) as anticipated by EP 1,020,216 (EP Suzuki et al), is respectfully traversed. EP Suzuki et al discloses a catalytic support including a mixture containing a porous oxide and a composite oxide, which mixture includes a particle having a particle diameter of 5 μm or more in an amount of 30% by volume or more (paragraph [0020]), wherein in the composite oxide particle, the average diameter of crystallite is not more than 10 nm (paragraph [0032]). There is no disclosure or suggestion in EP Suzuki et al that their composite oxide particle has the structure of the composite oxide

claimed herein, i.e., agglomerated particles having a surface and an inner portion whose metallic element distributions differ with each other.

The Examiner's response to the above arguments, at page 6 of the Office Action, is essentially the same as the response to the arguments over Mizutani et al, discussed above. Applicants' response above is herein incorporated by reference. In addition, the Examiner has not made any separate findings for independent Claims 13 and 15. Clearly, EP Suzuki et al neither disclose nor suggest the embodiments of these claims.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1-38 under 35 U.S.C. §102(e) as anticipated by either U.S. 6,150,288 (Suzuki et al '288) or U.S. 6,335,305 (Suzuki et al '305), is respectfully traversed. Suzuki et al '305 is the U.S. equivalent of, and is thus identical to, EP Suzuki et al, whose disclosure and deficiencies have been discussed above. Suzuki et al '288 discloses a composite oxide carrier in which component elements disperse with high homogeneity and more particularly a composite oxide catalyst crystallites of oxides of cerium and/or zirconium and secondary particles thereof, in which the sizes are decreased to a predetermined value or less, to enhance the heat resistance thereof as a composite oxide (column 1, lines 56-63). However, there is no disclosure or suggestion in Suzuki et al '288 that their composite oxide carrier has the same structure as the presently-claimed composite oxide, i.e., agglomerated particles having a surface and an inner portion whose metallic element distributions differ with each other.

The Examiner's response to the above arguments, at page 7 of the Office Action, is essentially the same as the response made to the above discussed arguments with regard to Mizutani et al, and EP Suzuki et al. Applicants' reply above is incorporated by reference herein. In addition, the Examiner has not made any separate findings for independent Claims

13 and 15. Clearly, neither Suzuki et al '305 nor Suzuki et al '288 disclose or suggest the embodiments of these claims.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1-38 under 35 U.S.C. §103(a) as obvious over EP 0 778,071 (Suda et al) in view of U.S. 4,910,180 (Berndt et al), is respectfully traversed. Suda et al discloses a particle containing a solid solution of oxides in which one oxide is dissolved into the other oxide, and in which the degree of dissolution of one oxide into the other oxide is not less than 50%, and in which an average diameter of crystallite is not more than 100 nm (Abstract). The particle may contain ceria and zirconia (page 3, lines 46-49). However, Suda et al neither disclose nor suggest a composite oxide having the presently-claimed structure, i.e., agglomerated particles having a surface and an inner portion whose metallic element distributions differ with each other. Berndt et al does not remedy the above-discussed deficiencies in Suda et al. The Examiner relies on Berndt et al simply for a disclosure of particle size. However, even if the particles of Suda et al had the presently-recited particle size, the result would still not be the presently-claimed invention.

The Examiner's response to the above arguments is essentially the same as the response to the arguments made in the above-applied rejections. Applicants' reply thereto is incorporated by reference herein. In addition, the Examiner has not made any separate findings for independent Claims 13 and 15. Clearly, Suda et al neither disclose nor suggest the embodiments of these claims.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1, 26, 27 and 33 under 35 U.S.C. §112, first paragraph, is respectfully traversed.

During the above-referenced interview, Applicants' counsel explained the support in the original disclosure for the term "wherein the plurality of fine particles comprises oxides

of a plurality of metallic elements, and each fine particle independently comprises an oxide of one or more of said metallic elements." Applicants gratefully acknowledge the Examiner's indication during the interview that this rejection is overcome. Accordingly, it is respectfully requested that it be withdrawn.

All of the presently pending and active claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Norman F. Oblon
Attorney of Record
Registration No. 24,618

Harris A. Pitlick
Registration No. 38,779

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220

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